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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/838,329	04/20/2001	Keizo Ohnishi	0965-0350P	1030

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BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER

MICALSKI, JUSTIN I

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 10/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/838,329	Applicant(s) OHNISHI ET AL.	
	Examiner Justin Michalski	Art Unit 2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 14-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of claims 1-13 in the reply filed on 25 August is acknowledged. The Office notes the applicants have made no arguments regarding the traversal of the election requirement.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 3 and 8, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. (Hereinafter "Matsumoto") (JP405257484A) in view of Shima et al. (Hereinafter "Shima") (US Patent 6,006,858).

Regarding Claim 1, Matsumoto discloses an active acoustic control cell, disposed on an upper end surface of a noise insulation wall, for controlling a coming noise such that a diffracted sound pressure component of the coming noise at the upper end surface is actively reduced (Fig. 2). Matsumoto does not disclose one sound tube which is nearly  $\frac{1}{4}$  of a wavelength, the sound tube on a side of the active acoustic control cell facing a sound source to be subjected to sound reduction. Shima discloses a sound insulation wall with a tube which is  $\frac{1}{4}$  a wavelength to cancel resonance frequencies (Col. 5, lines 23-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a sound tube of  $\frac{1}{4}$  a wavelength to cancel resonance frequencies and further reduce noise.

Regarding Claims 2 and 3, Matsumoto discloses an active acoustic control cell, disposed on an upper end surface of a noise insulation wall, for controlling a coming noise such that a diffracted sound pressure component of the coming noise at the upper end surface is actively reduced (Fig. 2). Matsumoto does not disclose one sound tube which is nearly  $\frac{1}{4}$  of a wavelength, the sound tube on a side of the active acoustic control cell facing a sound source to be subjected to sound reduction and a sound absorption material or an acoustic resistor. Shima discloses a sound insulation wall with a tube which is  $\frac{1}{4}$  a wavelength to cancel resonance frequencies (Col. 5, lines 23-25). Shima further discloses sound absorbing material (i.e. acoustic resistor) (Col. 3,

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lines 1-6). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a sound tube of  $\frac{1}{4}$  a wavelength to cancel resonance frequencies and further reduce noise.

Regarding Claim 4, Matsumoto discloses an active acoustic control cell, disposed on an upper end surface of a noise insulation wall, for controlling a coming noise such that a diffracted sound pressure component of the coming noise at the upper end surface is actively reduced (Fig. 2). Matsumoto does not disclose one sound tube which is nearly  $\frac{1}{4}$  of a wavelength, the sound tube on a side of the active acoustic control cell facing a sound source to be subjected to sound reduction and an acoustic resonator. Shima discloses a sound insulation wall with a tube which is a counter-resonator of  $\frac{1}{4}$  a wavelength to cancel resonance frequencies (Col. 5, lines 23-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a sound tube of  $\frac{1}{4}$  a wavelength to cancel resonance frequencies and further reduce noise.

Regarding Claim 5, Matsumoto discloses an active acoustic control cell, disposed on an upper end surface of a noise insulation wall, for controlling a coming noise such that a diffracted sound pressure component of the coming noise at the upper end surface is actively reduced (Fig. 2). Matsumoto does not disclose an acoustic resonator, the resonator on a side of the active acoustic control cell facing a sound source to be subjected to sound reduction and an acoustic resonator. Shima discloses a sound a counter-resonator to cancel resonance frequencies (Col. 5, lines 23-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time the

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invention was made to include an acoustic resonator to cancel resonance frequencies and further reduce noise.

Regarding Claim 6, Matsumoto discloses an active acoustic control cell, disposed on an upper end surface of a noise insulation wall, for controlling a coming noise such that a diffracted sound pressure component of the coming noise at the upper end surface is actively reduced (Fig. 2). Matsumoto does not disclose one sound tube which is nearly  $\frac{1}{4}$  of a wavelength, the sound tube on a side of the active acoustic control cell facing a sound source to be subjected to sound reduction. Shima discloses a sound insulation wall with a tube which is  $\frac{1}{4}$  a wavelength to cancel resonance frequencies (Col. 5, lines 23-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a sound tube of  $\frac{1}{4}$  a wavelength to cancel resonance frequencies and further reduce noise.

Regarding Claims 7 and 8, Matsumoto discloses an active acoustic control cell, disposed on an upper end surface of a noise insulation wall, for controlling a coming noise such that a diffracted sound pressure component of the coming noise at the upper end surface is actively reduced (Fig. 2). Matsumoto does not disclose one sound tube which is nearly  $\frac{1}{4}$  of a wavelength, the sound tube on a side of the active acoustic control cell facing a sound source to be subjected to sound reduction and a sound absorption material or an acoustic resistor. Shima discloses a sound insulation wall with a tube which is  $\frac{1}{4}$  a wavelength to cancel resonance frequencies (Col. 5, lines 23-25). Shima further discloses sound absorbing material (i.e. acoustic resistor) (Col. 3, lines 1-6). Therefore, it would have been obvious to one of ordinary skill in the art at the

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time the invention was made to include a sound tube of  $\frac{1}{4}$  a wavelength to cancel resonance frequencies and further reduce noise.

Regarding Claim 9, Matsumoto discloses an active acoustic control cell, disposed on an upper end surface of a noise insulation wall, for controlling a coming noise such that a diffracted sound pressure component of the coming noise at the upper end surface is actively reduced (Fig. 2). Matsumoto does not disclose one sound tube which is nearly  $\frac{1}{4}$  of a wavelength, the sound tube on a side of the active acoustic control cell facing a sound source to be subjected to sound reduction and an acoustic resonator. Shima discloses a sound insulation wall with a tube which is a counter-resonator of  $\frac{1}{4}$  a wavelength to cancel resonance frequencies (Col. 5, lines 23-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a sound tube of  $\frac{1}{4}$  a wavelength to cancel resonance frequencies and further reduce noise.

Regarding Claim 10, Matsumoto discloses an active acoustic control cell, disposed on an upper end surface of a noise insulation wall, for controlling a coming noise such that a diffracted sound pressure component of the coming noise at the upper end surface is actively reduced (Fig. 2). Matsumoto does not disclose an acoustic resonator, the resonator on a side of the active acoustic control cell facing a sound source to be subjected to sound reduction and an acoustic resonator. Shima discloses a sound a counter-resonator to cancel resonance frequencies (Col. 5, lines 23-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time the

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invention was made to include an acoustic resonator to cancel resonance frequencies and further reduce noise.

5. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto/Shima as applied to claims 1-10 above, and further in view of Masaharu (JP 09119114).

Matsumoto/Shima disclose a wall as stated apropos of claims 1-10 above but do not disclose a plurality of the active sound reduction apparatuses disposed in a row along a longitudinal direction of the wall. Masaharu discloses an active noise cancellation system with a wall comprising a plurality of apparatuses in a longitudinal direction (Fig. 3). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a plurality of apparatuses in a longitudinal direction in order to cancel sound for the entire length of the wall.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nishimura (US Patent 6,041,125) discloses an active acoustic wall.

Yamamoto (US Patent 4,436,179) discloses a noise control apparatus for a wall.

Shima (US Patent 5,678,364) discloses a soundproof wall.



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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (571)272-7524. The examiner can normally be reached on M-F 7-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JIM

  
September 30, 2005

  
VIVIAN CHIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600